Introduction

Drug reactions such as transient movement disorders, emergence delirium, hysteria, and shivering are common after general anesthesia, but acute severe dystonic reactions are rare.

An Acute Dystonic Reaction after General Anesthesia is a drug induced movement disorder occurring during the perioperative period in patients undergoing surgical procedures with general anesthesia. Related symptoms are: dystonia, masseter spasm, generalized tonic-clonic seizure, abnormal limb and neck flexion, muscle rigidity.

Etiology: Imbalance between dopaminergic and cholinergic neurotransmitters in the CNS triggered by Sevoflurane, Propofol, Anti-emetics, and/or narcotics.

Diagnosis: Clinical assessment, EEG if thought to have epileptic origin

Treatment: Supportive care, Benadryl, Benzotropine, Naloxone, Benzodiazepines

Case Presentation

We describe a patient with a severe dystonic reaction during emergence from general anesthesia. The patient is a nine year old boy with twenty-nine previously uneventful anesthetics presenting for routine Microlaryngoscopy and Bronchoscopy for excision of vocal cord papillomas.

PMII: Respiratory papillomatosis, Obstructive Sleep Apnea, and Attention Deficit Hyperactive Disorder

Medications: Methylphenidate

Intraoperative Course:

- Sevoflurane mask induction.
- Intraop Medications → Propofol 30mg, Fentanyl 30mcg, Ondansetron 2.5mg
- General anesthesia maintained with a mask throughout procedure.

Event:

- Emergence: Muscle rigidity, horizontal nystagmus, muscle fasiculations on both cheeks.

Case Presentation

The patient remained hemodynamically stable with no hyperdynamic signs throughout event.

The patient was observed in the operating room for an hour.

Ventilation was maintained via face mask

Muscle rigidity spontaneously subsided after forty minutes of continuous tonic activity.

Improvement started in distal muscle groups and progressed proximally.

The patient began to follow commands, opening his eyes and weakly squeezing the anesthesiologist’s hand, but was still confused.

Within another 10 minutes his confusion resolved and he was taken to the recovery unit for further evaluation.

Postoperative course:

- The patient remained hemodynamically stable throughout his recovery.
- A Neurology consult was obtained, and the team proposed that the event was likely attributable to sevoflurane.

Discussion

- The majority of dystonic reactions in the pediatric population occur secondary to Propofol, anti-emetics, or narcotics.
- Acute dystonic reactions after general anesthesia with sevoflurane in pediatric patients are exceedingly rare.
- There are case reports of paradoxical dystonia after Methylphenidate administration.
- Dopamine stimulation in the basal ganglia inhibits movement due to neuronal synaptic cleft plasticity.
- Sevoflurane may modify relationship between dopamine receptor blockade and perhaps other CNS neurotransmitters.
- This patient was not naïve to general anesthesia, but had 29 prior exposures.

References